

Remarks

Terminal disclaimers are enclosed to address the double patenting rejections.

In the office action the Examiner set forth two section 103(a) rejections for the claims. Applicant rebuts the obviousness rejections by demonstrating evidence of secondary considerations (commercial success). The evidence of commercial success includes the following:

1. Prior to the invention, the market leader in dental curing lights was Kerr/Demetron (division of Sybron Dental Specialties).
2. Prior to the invention, numerous other companies were already entrenched in the market for dental curing lights, including 3M, Espe, DMD, Welch-Allyn, American Dental Technologies, Luma-Lite, and Dentsply/Caulk.
3. The Cao Group manufactures product embodying the invention, and that product is distributed by Ultradent Products, Inc. of South Jordan, Utah ("Ultradent").
4. Prior to distributing the invented dental curing light, Ultradent was not a player in the dental curing light market.
5. Since undertaking distribution of the invented dental curing light, Ultradent has gone from being a non-player in dental curing lights to becoming the market leader in dental curing lights sold in the United States, supplanting Kerr/Demetron.
6. Ultradent is currently selling the invented dental curing light at an annualized rate of about 8,000 dental curing lights per year, representing about \$8,000,000 in yearly retail sales volume. This represents a market share of approximately

7% of the dental curing light market in the United States.

7. Ultradent's market dominance in distributing the invented dental curing light cannot be attributed to low price since the Ultra-Lume LED 2 retails for \$999 while many other dental curing lights have a lower retail price in the range of \$500 to \$700.

8. Ultradent's market dominance in distributing the invented dental curing light cannot be attributed to Ultradent's prior dominance or reputation in dental curing lights since Ultradent was not a player in dental curing lights until Ultradent began distributing my product.

9. Both laboratory testing and reports from dentists in the field indicate that the invented dental curing light is more desirable than prior art dental curing lights for at least two important reasons:

(i) Complete Cure. The invented dental curing light generates sufficient power (light intensity) to cure most accepted dental composites completely. Many other dental curing lights, in particular recently-introduced LED dental curing lights, either do not achieve complete cure of the composite, or do not cure many of the popular composites used in dentistry.

(ii) Heat Management. The invented dental curing light uses an elongate heat sink that occupies at least 50% of the length of the dental curing light wand in order to draw heat away from the semiconductor light source. This heat management technique allows the semiconductor light source to operate cool and without danger of placing excessive heat inside of a patient's mouth, which is a distinct advantage over prior art halogen and plasma arc dental curing lights. This heat management technique also keeps dental curing light power (light intensity) high because it avoids causing a heat effect and consequent drop

in light intensity that is common in LED dental curing lights when the semiconductor is overheated. Avoiding the heat effect and consequent drop in power assists the invented dental curing light in achieving a Complete Cure (above) where many competing products fail.

10. Success of the invented dental curing light in the market and Ultradent's rise from a non-player in dental curing lights to the market leader in the U.S. can be traced to superior performance of the invented dental curing light, and that superior performance can be traced to features that are the subject of the pending patent claims.


11. The pending claims read on the invented Ultra-Lume LED 2 and Ultra-Lume LED 5 being distributed by Ultradent.

14. I believe that rise of the Ultra-Lume LED 2 and Ultra-Lume LED 5 to market leader in the United States based on their performance and features is clear evidence of commercial success of the invention.

This evidence of commercial success that rebuts a prima facie obviousness rejection. Without the performance advantages of the invention, the intended dental curing light would not have supplanted the market leader in the field and without the performance advantages of the invention, dentists would not pay a significant price premium for the invented dental curing light.

Favorable reconsideration of the patent application is requested..

Respectfully submitted this 15 day of January, 2004.



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